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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,621	10/17/2003	Toshikazu Nakamura	1259-0241P	8893

2292 7590 10/13/2006

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EXAMINER	
DRODGE, JOSEPH W	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/686,621	NAKAMURA ET AL.	
	Examiner	Art Unit	
	Joseph W. Drodge	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) *32-65* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *32-65* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *101703*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims 1-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, "through said film medium" at the end of the claim is confusing; apparently this should be "filter medium".

It is unclear if claim 6 and claims dependent therefrom positively recite that the acidic material must be a derivative of a carboxylic acid.

In claims 8 and 15, "in at least several ones of plural groups" is confusing.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3,5,6 are rejected under 35 U.S.C. 102(e) as being anticipated by Reinehr et al patent 6,830,715. Reinehr discloses a method of filtering a polymer solution, including trapping particles, and adding an acidic material to the solution before filtering (column 2, lines 43-62, column 3, lines 1-3 and column 5, lines 33-41 concerning addition of acids). For claim 2, reducing tendency of particles to adhere to

pore walls is considered an inherent property of the type of carboxylic acid employed by Reinehr. For claim 3, as the carboxylic acid added is a relatively weak acid, it inherently has a relatively low ionization constant. For claims 5 and 6, the stearic acid disclosed by Reinehr at column 5, lines 33-41 is a carboxylic acid.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaudette patent 5,800,718. Gaudette discloses a method of filtering a polymer solution, including trapping particles, and adding an acidic material to the solution before filtering (column 3, lines 25-43). For claim 2, reducing tendency of particles to adhere to pore walls is considered an inherent property of the type of acid employed by Gaudette, see column 2, lines 39-41. For claim 3, as the acid added may result in only a pH drop to the range of 6.0 to 6.5 (column 2, lines 37-39), there is a relatively low ionization constant.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese publication 2000-256477 of record with the 10/2003 IDS statement (Shimuzu et al) in view of Gaudette patent 5,800,718. Shimuzu discloses a method of filtering a polymer solution, including trapping particles (provided translated Abstract). The claims differ in requiring addition of an acidic material to the polymer solution before passing it through the filter medium. However, Gaudette filters solutions of polymers after a first step of adding an acid to the feed. It would have been obvious to one of ordinary skill in the art to have modified the Shimuzu method by adding an acid as in Gaudette, in order to. For claim 4, Shimuzu discloses purifying of solution containing cellulose ester.

For claim 2, reducing tendency of particles to adhere to pore walls is considered an inherent property of the type of acid employed by Gaudette. For claim 3, as the carboxylic acid added is a relatively weak acid, it inherently has a relatively low ionization constant.

Claims 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimuzu et al in view of Gaudette as applied to claims 1-4 above, and further in view of Gillberg-Laforce et al patent 5,618,622. Claim 5 and claims 6-14 dependent therefrom further differ from Shimuzu in requiring addition of a carboxylic acid. However, Gillberg-Laforce teaches to add carboxylic acid (column 4, lines 38-43) to modify the properties of a filter medium for purifiying polymer products (column 1, lines 8-20). The carboxylic acid may be added in a feed stream supplied to the filter, possibly also mixed with a pH-changing form of acid (column 6, lines 33-48). It would have been also obvious to have utilized the carboxylic acid treatment of Gillberg-Laforce to the process of Shimuzu, so as to render the filter medium capable of adsorbing charged impurities in the feed stream.

The substituent hydrocarbon and carboxylic groups of claim 6 is taught by Gillberg-Laforce at column 4, lines 38-68. For claims 7 and 8, the filter of Shimuzu is paper, hence cellulose-containing fiber. For claim 9, paper/cellulose filters of Shimuzu inherently have the recited pore size. For claims 10 and 11, Shimuzu is silent as to varying the flow rate of the polymer, hence discloses a steady flow rate. For claim 12, line 3 of the Shimuzu Abstract discloses cellulose ester. For claims 13 and 14, Official Notice is taken that both chlorinated and non-chlorinated solvents are well known solvents in preparing cellulose ester dope.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimuzu et al in view of Gillberg-Laforce et al patent 5,618,622. Shimuzu discloses a method of filtering a polymer solution, including trapping particles (provided translated Abstract). The filter is of paper, hence cellulose. Shimuzu also discloses purifying of solution containing cellulose ester. The claims differ in requiring substituting acidic groups for hydrogen atoms in hydroxyl groups of the cellulose fiber during it's preparation. However, Gillberg-Laforce teaches to add carboxylic acid (column 4, lines 38-43) to modify the properties of a filter medium for purifiying polymer products (column 1, lines 8-20). The carboxylic acid molecules are added in such manner that they provide cationic and anionic groups to surface modify the filter medium (column 3, lines 11-23) which may be a cellulose or other fibrous medium (column 2, lines 39-47). The carboxylic acid may be added in a feed stream supplied to the filter, possibly also mixed with a pH-changing form of acid (column 6, lines 33-48). It would have been o obvious to have utilized the carboxylic acid treatment of Gillberg-Laforce to the process of Shimuzu, so as to render the filter medium capable of adsorbing charged impurities in the feed stream.

For claim 17, the acidic groups may facilitate particles being adhered to the outer surface of the filter medium, rather than within the pores (column 2, lines 48-53 and column 3, lines 2-7). Shimuzu discloses cellulose ester polymer solution in the Abstract.

Claims 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimuzu et al in view of Gillberg-Laforce et al as applied to claims 15-17 above, and further in view of Gaudette patent 5,800,718. Claims 18-31 additionally differ in requiring adjusting the hydrogen ion concentration, or pH, of the solution being filtered by addition of water and a concentration changing additive. Gillberg also teach changing the feed with acidic solutions to prepare the filter (column 6, lines 40-48), while Gaudette teaches to control pH or hydrogen ion concentration by metering acid into an aqueous solution containing the feed (column 2, lines 25-44). It would have been also obvious to have modified the Shimuzu process by changing the hydrogen ion concentration or pH of the feed, as taught by Gaudette and Gilberg-Laforce to lower the surfactant level of the feed so as to prevent it from sticking and thus clogging the filter medium.

The substituent hydrocarbon and carboxylic groups of claims 19 and 20 are taught by Gillberg-Laforce at column 4, lines 38-68. Regarding claims 21-26, see the discussion of claims 9-14 having the same limitation. For claims 27-31, the Shimuzu Abstract further discloses production of polymer film that may be polarized or used for liquid display elements or other for other types of optical film.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lorenz et al patent 4,077,880 and Hills patent 5,462,653 also concern filtration of polymer solutions .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number

571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

October 5, 2006

JOSEPH DRODGE
PRIMARY EXAMINER